

REMARKS

Applicants confirm the provisional election of Group I, claims 1-25, 40-48, 62-69, and 86-96, with traverse. The traversal is made on the grounds that it is believed that a single search and examination covering all claims would not place undue burden on the Examiner.

Minor clarifications have been made to claims 1, 8, and 86. It is believed that these amendments do not significantly alter the scope of these claims.

Applicants thank the Examiner for the correction of the Prakash citation in the Information Disclosure Statement.

Claims 1-25, 40-48, 62-69, and 86-96 are now being examined for patentability. Claims 26-39, 49-61, 70-85, and 97-98 have been withdrawn from consideration.

Rejections under 35 U.S.C. §112, ¶1

Claims 62-69 have been rejected under 35 U.S.C. §112, ¶1 as failing to comply with the written description requirement. The Patent Office alleges that the Applicants “fail[] to provide sufficient written description of acceptable cells beside *E. coli* that can be used in the claimed invention.”

Applicants respectfully disagree, and note that examples of other cells are given in the specification, for example, on page 13, lines 11-12, or page 16, lines 4-8. In addition, those of ordinary skill in the art will be aware of techniques that can be used to transform a cell, for example, as is discussed in Sambrook, *et al.*, *Molecular Cloning: A Laboratory Manual*, Cold Spring Harbor Press, NY, 1989 (“Sambrook”), described in the specification (e.g., on page 13, lines 2-10, or page 15, lines 28-31). Thus, those of ordinary skill in the art would be able to use any suitable cell in which to transfect a gene of interest.

Applicants therefore believe that that one of ordinary skill in the art, in reading the instant application and the disclosure of known transfection techniques, e.g., as discussed in Sambrook, would understand the specification to reasonably convey that the Applicants had possession of the claimed invention, and thus, Applicants respectfully request that the rejection of claims 62-69 be withdrawn.

Rejections under 35 U.S.C. §112, ¶2

Claims 1-25 have been rejected under 35 U.S.C. §112, ¶2 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

While the rejection of claim 1 is somewhat unclear, Applicants have amended claim 1 to clarify that the oral delivery composition comprises a capsule, and that the capsule comprises at least one of isolated uricase and isolated creatininase. It is believed that the term “comprising,” with respect to the capsule, is open-ended, i.e., each enzyme may independently be present at any location in the capsule, e.g., within the outer material of the capsule and/or within the interior of the capsule.

Regarding the term “substantially” in claims 6 and 8, it is believed that the presence of the term “substantially” in those claims does not necessarily render the claims indefinite. See MPEP §2173.05(b), part D.

With respect to the term “therethrough” in claim 8, Applicants have elected to amend the claim as requested, although Applicants believe claim 8 to be clear as originally presented.

It is thus respectfully requested that the rejection of claims 1-25 under 35 U.S.C. §112, ¶2 be withdrawn for at least the above reasons.

Rejections under 35 U.S.C. §102(b) in view of Marquisee

Claims 1, 6, and 7 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,954,678 (“Marquisee”).

It is not seen where in Marquisee is there a disclosure or suggestion of an oral delivery composition, as is recited in claim 1. Marquisee teaches a semipermeable microcapsule that contains a silica gel (see, e.g., the abstract). Nowhere does Marquisee teach or suggest that the semipermeable microcapsule is useful as an oral delivery composition. Instead, Marquisee is concerned with encapsulating materials within a silica gel, defined in Marquisee as “a jelly to amorphous solid which is basically $\text{SiO}_2 \cdot n\text{A}_2\text{O}$ and which can contain small amounts of other ingredients such as, e.g., Na_2O ,” (Column 1, lines 43-46). Marquisee then explains that such silica

gels are used as highly effective packing material for liquid and gas chromatographic columns (Column 5, lines 24-26), and can be used "in a wide variety of catalytic reactions involving either aqueous or organic media," (Column 5, lines 26-29). Thus, Applicants do not believe that the compositions described by Marquisee could be taken orally as an oral delivery composition.

It is therefore believed that claim 1 is not anticipated by Marquisee, and it is respectfully requested that rejection of claim 1 be withdrawn. Claims 6 and 7 each depend on claim 1, and are believed to be allowable for at least these reasons. Withdrawal of the rejection of claims 6 and 7 is also therefore respectfully requested.

Rejections under 35 U.S.C. §102(b) in view of Wolfe

Claims 86-88, 92, and 93 have been rejected under 35 U.S.C. §102(b), as being anticipated by Wolfe, *et al.*, "Orally ingested microencapsulated urease and an adsorbent, zirconium phosphate, to remove urea in kidney failure," *Int. J. Artificial Organs*, 10(4): 269-274, 1987 ("Wolfe"). The Patent Office asserts that because claim 86 does not require at least two different isolated enzymes, Wolfe anticipates these claims.

Applicants have elected to amended claim 86 to explicitly recite that the capsule comprises at least two different types of isolated uremic enzymes. Wolfe does not teach or suggest at least two different types of isolated uremic enzymes, and thus, it is respectfully requested that the rejection of claim 86 be withdrawn. However, Applicants believe that claim 86, as originally presented, would be understood by one of ordinary skill in the art to require at least two different types of enzymes, and thus, Applicants do not concede that Wolfe anticipates claim 86 as originally presented.

Claims 87, 88, 92, and 93 each depend from claim 86, and are believed to be allowable for at least the above-mentioned reasons. The withdrawal of the rejection of these claims is also respectfully requested.

Rejections under 35 U.S.C. §103(a) in view of Chang, Setala,
Yamamoto, Shigyo, and the Online Medical Dictionary

Claims 1-4, 6-8, 10-17, 25, 40-45, 47, 48, 52-66, 68, 69, 86-91, and 93-96 have been rejected under 35 U.S.C. §103(a) as being unpatentable over of Chang, *et al.*, U.S. Patent No. 6,217,859 ("Chang"), in view of Setala, U.S. Patent No. 4,022,883 ("Setala"), and in further view of Yamamoto, *et al.*, U.S. Patent No. 5,627,065 ("Yamamoto"), and Shigyo, *et al.*, U.S. Patent No. 5,728,562 ("Shigyo") and in light of the Online Medical Dictionary (<http://cancerweb.ncl.ac.uk/cgi-bin/omd>, accessed 2/28/05).

Although the Patent Office states that claims 52-66 have been rejected, it is believed that this is a typographical error in view of the above-described election of Group I, and that the Patent Office intended to reject claims 62-66.

With respect to independent claims 1 and 86, it is not seen where in any of Chang, Setala, Yamamoto, Shigyo, and the Online Medical Dictionary is there a disclosure or a suggestion of isolated uricase and isolated creatininase, as recited in claim 1, or an isolated uremic enzyme, as recited in claim 86. Both Chang and Setala describe various microorganisms (see, e.g., their respective abstracts), but nowhere disclose or suggest an isolated enzyme. To the contrary, Chang and Setala each teach that a microorganism is required, and thus, Chang and Setala each teach away from an isolated enzyme.

Yamamoto and Shigyo appear to be relied on by the Patent Office only to provide genetic sequences that can be transfected into the above-described microorganisms of Chang and Setala, and thus do not cure the defects of Chang and Setala in order to reach the invention as claimed. Additionally, Applicants do not concede that there would have been motivation to combine Chang and Setala with Yamamoto and Shigyo, as suggested by the Patent Office.

The Online Medical Dictionary appears to be relied on for definitions of various enzymes. While Applicants do not concede that any of the definitions from the Online Medical Dictionary are scientifically accurate with respect to one of ordinary skill in the art, it is not seen how the definitions provided by the Patent Office can be used to cure the defects of the combination of Chang, Setala, Yamamoto, and Shigyo in order to reach the claimed invention.

Accordingly, it is believed that independent claims 1 and 86 are patentable in view of Chang, Setala, Yamamoto, Shigyo, and the Online Medical Dictionary, and it is respectfully requested that the rejection of these claims be withdrawn. Claims 2-4, 6-8, 10-17, 87-91, and 93-96 each depend, directly or indirectly, from independent claims 1 and 86, and are believed to be allowable for at least the above-described reasons. Withdrawal of the rejection of these claims is therefore respectfully requested.

Regarding independent claims 40 and 62, it is not seen where in either Chang or Setala is there a disclosure or a suggestion of transfecting a cell with a uricase gene or a creatininase gene. Chang is directed to using microorganisms genetically engineered to remove urea or amino acids (Col. 3, lines 47-57), but nowhere discloses or suggests the desirability of removing uric acid or creatinine. Accordingly, one of ordinary skill in the art, in reading Chang, would not be motivated to modify a cell by transfecting it with a uricase gene or a creatininase gene, and thus, would not be motivated to combine Chang with Setala, as suggested in the Office Action. Moreover, as neither Chang nor Setala discloses or suggests transfecting a cell with a uricase gene or a creatininase gene, there is no suggestion or motivation to combine Chang and Setala with Yamamoto and Shigyo in the manner suggested by the Patent Office.

Accordingly, Applicants believe that claims 40 and 62 are patentable in view of Chang, Setala, Yamamoto, Shigyo, and the Online Medical Dictionary. Claims 41-45, 47, 48, 63-66, 68, and 69 each depend, directly or indirectly, from claim 40, and are believed to be patentable for at least these reasons. Thus, Applicants respectfully request that the rejection of claims 40-45, 47, 48, 62-66, 68, and 69 be withdrawn.

Rejections under 35 U.S.C. §103(a) in view of Chang, Setala, Yamamoto,
Shigyo, the Online Medical Dictionary, and Merriam-Webster

Claims 5 and 9 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Chang in view of Setala, further in view of Yamamoto and Shigyo, and still further in light of the Medical Dictionary, and the Merriam-Webster Online Dictionary (<http://www.m-w.com>, access date not given) ("Merriam-Webster").

Applicants do not concede to the accuracy of Merriam-Webster, especially from the viewpoint of one of ordinary skill in the art. Moreover, for at least the reasons explained above with respect to the rejection under §103(a) in view of Chang, Setala, Yamamoto, Shigyo, and the Online Medical Dictionary, the premise of the rejection of claim 1 (that the above references teach or suggest all of the limitations of claim 1) is believed to be incorrect. Accordingly, while Applicants do not concede that there would have been any suggestion or motivation in any of Chang, Setala, Yamamoto, Shigyo, the Online Medical Dictionary, and Merriam-Webster to make the modification (e.g., with respect to acid degradation and/or enteric coating) suggested in the Office Action, the present rejection cannot stand, regardless. Thus, withdrawal of the rejection of claims 5 and 9 is respectfully requested.

Rejections under 35 U.S.C. §103(a), in view of Chang, Setala, Yamamoto,
Shigyo, Sparks, Wolfe, and the Online Medical Dictionary

Claims 18-21, 46, 67, and 92, have been rejected under 35 U.S.C. §103(a) as being unpatentable over Chang in view of Setala, further in view of Yamamoto and Shigyo, and still further in view of Sparks, *et al.*, "Binders to remove uremic waste metabolites from the GI tract," *Trans. Amer. Soc. Artif. Int. Organs*, 18:458-464, 484, 1972 ("Sparks") and Wolfe, and in light of the Online Medical Dictionary.

These claims depend, directly or indirectly, from independent claims 1, 40, 62, and 86. For at least the above-described reasons with respect to the rejection under §103(a) in view of Chang, Setala, Yamamoto, Shigyo, and the Online Medical Dictionary, Applicants believe that the premise of the rejection of claims 1, 40, 62, and 86 (that the above references teach or suggest all of the limitations of these claims) is incorrect. Accordingly, while Applicants do not concede that there would have been any suggestion or motivation to combine Chang, Setala, Yamamoto, Shigyo, the Online Medical Dictionary, Sparks, and Wolfe in the manner suggested by the Patent Office, the present rejection cannot stand, regardless. Thus, it is respectfully requested that the rejection of claims 18-21, 46, 67, and 92 be withdrawn.

Rejections under 35 U.S.C. §103(a) in view of Chang, Setala,
Yamamoto, Shigyo, Smith, and the Online Medical Dictionary

Claims 22-24, 46, 67, and 92 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Chang in view of Setala, further in view of Yamamoto and Shigyo, and still further in view of Smith, *et al.*, U.S. Patent No. 4,857,555 ("Smith") and in light of the Online Medical Dictionary.

Claims 22-24, 46, 67, and 92 depend, either directly or indirectly, from independent claims 1, 40, 62, and 86. For at least the above reasons with respect to the rejection under §103(a) in view of Chang, Setala, Yamamoto, Shigyo, and the Online Medical Dictionary, it is believed that the premise of the rejection of claims 1, 40, 62, and 86 (that these references teach or suggest all of the limitations of these claims) is incorrect. Accordingly, while it is not conceded that there is any suggestion or motivation to combine Chang, Setala, Yamamoto, Shigyo, Smith, and the Online Medical Dictionary as suggested by the Patent Office, the present rejection cannot stand, regardless. Thus, withdrawal of the rejection of claims 22-24, 46, 67, and 92 is respectfully requested.

CONCLUSION

In view of the foregoing, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this response, that the application is not in condition for allowance, the Examiner is requested to call the undersigned at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time.

Serial No.: 10/731,877
Confirmation No.: 9392

- 20 -

Art Unit: 1651

If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,

By:



Tan Chen, Sc.D., Reg. No.: 52,728
Helen C. Lockhart, Ph.D., Reg. No.: 39,248
Wolf, Greenfield & Sacks, P.C.
600 Atlantic Avenue
Boston, Massachusetts 02210-2206
Telephone: (617) 646-8000

Date: June 10, 2005
x06/11/05x